

## The Fuels Synthesis Division of the Joint BioEnergy Institute (JBEI)

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The Fuels Synthesis Division of JBEI aims to engineer microbial host platforms and pathways for the production of fuels from lignocellulose hydrolysates obtained from JBEI's Deconstruction Division. Host platforms being employed by JBEI include *E. coli*, *S. cerevisiae*, and *Sulfolobus* spp. Host engineering includes a variety of tasks, such as metabolic engineering that combines native and non-native pathways, assessment of bottlenecks in metabolic flux and toxic effects of metabolites, gene discovery, and rational and combinatorial strain evolution. Collaborative efforts with JBEI's Technology Division include systems biology analytical and computational tools (genomics, transcriptomics, proteomics, metabolomics, fluxomics), robotics, and imaging. Of the broad range of fuels of interest to JBEI, efforts to date have focused on the following: (1) short-chain alcohols (e.g., butanol), (2) isoprenoid-based fuels (e.g., isopentenol), and (3) fatty acid-based fuels. In this poster, we present some of our strategies and results.